REMARKS

The presented amendment corrects minor errors in the specification and claims. Entry of the amendment is respectfully requested.

Respectfully submitted,

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Amendments to the Specification:

Please amend the paragraph beginning on page 2, at line 19 as shown below:

In carrying out the above object, a fluorescent lamp electronic ballast is provided. The ballast comprises a power factor correction flyback circuit and an inverter ballast circuit. The power factor correction flyback circuit is composed of a rectifier connected to a DC to DC flyback converter. The flyback converter includes a flyback transformer connected to a diode/capacitor combination. The flyback converter includes a switch used to switch the flyback transformer during operation to produce a flyback waveform that is rectified by the diode and results in a DC output at the capacitor. The inverter ballast circuit receives the DC output and ~~converts~~ inverts the DC output to an AC signal for operating the fluorescent lamp. The flyback converter may provide input to output isolation. The input voltage may be stepped up or stepped down.

Please amend the paragraph beginning on page 6, at line 20 as shown below:

Additional components shown in Figure 2 include diodes D3, D4, D5 connected across the primary winding of flyback transformer T3, resistors R1, R4, R7 and capacitor C8 connecting the rectifier output to the MULT pin, and resistors R2, R5 connecting the rectifier output to the VCC pin. The GND pin is grounded. Additionally, diode D6, capacitors C24, C25, C13, and resistors R29, R30 create a DC bias supply from an auxiliary winding of transformer T3. Resistor R16 senses current through transistor Q3 to provide a current sense signal to the CS pin. The ZCD pin uses resistor R10 to detect a zero current condition while diode D7, resistor R8, and capacitor C11 connect to the VCC pin. Still further, the GD pin connects to the gate of transistor Q3 through resistor R11, diode D8 and resistor R12. The flyback converter DC output voltage is divided by resistors R3, R6 and connected through feedback resistor R31 to the INV pin of integrated circuit U1. The INV pin is the inverting input of an internal ~~comparitor~~ comparator while the COMP pin is the internal ~~comparitor~~ comparator output. Capacitor C14 is connected between the COMP pin and the INV pin. The

control loop through resistor R31 monitors the flyback transformer to switch the flyback transformer asynchronously as needed to maintain energy balance.

Please amend the paragraph beginning on page 7, at line 10 as shown below:

In operation of PFC flyback circuit 10, diode bridge D1 rectifies the AC input signal to produce an output substantially taking the form of a rectified AC wave. Transistor Q3 switches transformer T3 to produce a flyback waveform that is rectified by diode D17 resulting in a DC output at capacitor C4. More specifically, Q3 is controlled with the GD pin. Generally, transistor Q3 is turned on resulting in current through the primary winding steadily increasing as energy is stored in the transformer core. This increasing primary winding current is detected at the CS pin and when the current reaches a threshold, transistor Q3 is turned off. Turning off transistor Q3 produces a flyback action causing the stored core energy to be discharged through diode D17 to charge capacitor C4. The flyback action is detected at the ZCD pin, and in response transistor Q3 is turned back on to once again begin ~~charging~~ magnetizing the transformer core. The flyback converter is generally operated in a transition mode with the switching frequency varied in response to the instantaneous line voltage and output current as realized in the signals at the CS and ZCD pins. The control loop including feedback resistor R31 monitors the flyback transformer and the integrated circuit U1 switches the flyback transformer asynchronously as needed to maintain energy balance. That is, at high voltage input or low current output the energy drawn each cycle may exceed the short-term demand from the load and the control loop delays the turning on of transistor Q3 so as to maintain the long-term energy balance by switching asynchronously. The twice mains frequency ripple at capacitor C23 is input to the MULT pin so that integrated circuit U1 may control switching appropriately. A wide range of frequencies is accommodated with low rectifier input capacitance (capacitor C23), low capacitance across the error amplifier for the control loop with a temperature compensating capacitor (capacitor C14), and a ratio of a line input peak voltage to the reflected voltage of less than one.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A fluorescent lamp electronic ballast comprising:

a power factor correction flyback circuit composed of a rectifier connected to a DC to DC flyback converter, the flyback converter including a flyback transformer connected to a diode/capacitor combination, the flyback converter including a switch used to switch the flyback transformer during operation to produce a flyback waveform that is rectified by the diode and results in a DC output at the capacitor; and

an inverter ballast circuit receiving the DC output and ~~converting~~ inverting the DC output to an AC signal for operating the flourescent lamp.

2. (original) The fluorescent lamp electronic ballast of claim 1 wherein the rectifier receives an AC input having a varying frequency and the rectifier has a sufficiently low input capacitance such that the rectifier output substantially takes the form of a rectified AC wave.

3. (original) The fluorescent lamp electronic ballast of claim 1 wherein the flyback converter is configured to operate in a transition mode.

4. (original) The fluorescent lamp electronic ballast of claim 3 wherein the flyback converter includes a control loop configured to monitor the flyback transformer and switch the flyback transformer asynchronously as needed to maintain energy balance.

5. (original) The flourescent lamp electronic ballast of claim 4 wherein the control loop is connected to the DC output.

6. (original) The fluorescent lamp electronic ballast of claim 1 wherein the rectifier receives an AC input having a frequency that varies to frequencies exceeding 300 Hz.

7. (original) The fluorescent lamp electronic ballast of claim 1 wherein the rectifier receives an AC input having a frequency that varies primarily between 300 Hz and 800 Hz.

8. (original) The flourescent lamp electronic ballast of claim 1 wherein the inverter ballast includes a self-oscillating resonant circuit including a pair of power transistors, and the flyback converter is further used to create a DC bias for use by the power transistors.

9. (original) The fluorescent lamp electronic ballast of claim 1 wherein the DC output is 28 VDC.

10. (original) The fluorescent lamp electronic ballast of claim 1 wherein the rectifier has an input capacitance of less than 0.5 microfarads.

11. (original) The fluorescent lamp electronic ballast of claim 1 wherein a ratio of a line input peak voltage to the reflected voltage is less than one.